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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,959	03/01/2004	Takemori Takayama	03773/LH	2156
1933	7590	01/04/2006	EXAMINER	
FRISHAUF, HOLTZ, GOODMAN & CHICK, PC 220 Fifth Avenue 16TH Floor NEW YORK, NY 10001-7708			YEE, DEBORAH	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/790,959

Applicant(s)

TAKAYAMA, TAKEMORI

Examiner

Deborah Yee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 to 12, 20 to 23 and 25 to 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 to 12, 20 to 23 and 25 to 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 November 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9-28-05; 11-02-04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS 3-1-04</u> .                       |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of group I, claims 1 to 12, 20 to 23 and 25 to 27 in the reply filed on 9-28-05 is acknowledged.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 to 12, 20 to 23 and 25 to 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 1 recites " 0.2 to 2 wt% of one or more alloy elements". It is uncertain if wt% range is for each element or for the total sum of elements.

5. Claim 1 recites "0.4 to 4.0% by volume of one or more compounds.." and then repeats the same compound limitation of 0.4 to 4.0% by volume " within the martensite parent phase" . It is uncertain if the first recitation is different or the same as the last recitation. If it is the same, then one of the recitations should be deleted.

6. Claim 1 recites "martensite parent phase having been subjected to induction hardening and low temperature tempering" . Base on reading applicant's specification, it seems that martensite phase is produced by induction hardening .

7. Claim 2 recites "2 to 15% by volume of cementite particles containing 2.5 to 10wt% Cr " which is indefinite. Note cementite is a carbide (  $\text{Fe}_3\text{C}$  ) and cannot contain Cr. Moreover it is uncertain whether 2.5 to 10wt% Cr is based on the total Cr content of the alloy or based on the total Cr content in the surface hardened area.

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8. Claim 3, "fine" perhaps should be replaced with ---refined--- or ---reduced---.
9. Claim 4, "such as" is indefinite and needs to be omitted.
10. In Claim 5, the word ---and--- should be incorporate after "Ni".
11. There is no antecedent basis for "quench hardened layer" recited in claims 3,6, and 8.
12. Claim 9 recites "rapid induction heating is done within 10 seconds in the temperature region of the A1 temperature of the steel material to a quenching temperature of 900 to 1050C". This is confusing and incomplete because there is no step of heating steel material to A1.
13. Claim 10 recites "quench hardened layer is formed along the contour of teeth" but there is no antecedent basis for "teeth".
14. Claim 20 is indefinite because it recites a method claim without any steps. Perhaps applicant should amend claim by reciting ---comprising the steps of subjecting said steel material to induction hardening by heating and quenching followed by a low-temperature tempering Also claim 20 recites 0.4 to 4.0% by volume of carbides, nitrides and carbonitrides limitation twice. It is uncertain whether the first recitation is different or the same as the last recitation. If it is the same, then one of the recitations should be deleted.
15. Claim 20 recites "martensite parent phase...has been subjected to induction heating quenching..." Base on applicant's specification, induction heating and quenching produces the martensite parent phase.

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16. Claim 21 recites "Cr concentration of the cementite has been adjusted to 2.5 to 10 wt% " yet cementite is a carbide (  $\text{Fe}_3\text{C}$ ) and can not contain Cr.
17. Claim 22 , line 4, "invention" should perhaps be replaced with ---steel material---.
18. Claim 22 recites rapid heating "in which the temperature of the steel material is raised from its A1 temperature to a quenching temperature of 900 to 1050C within 10 seconds" . This step is incomplete since heating steel material to reach A1 temperature is not recited.
19. In claim 23 there is no antecedent basis for "gear".
20. Claim 27, "The rolling element according to claim 25" should be replaced with ---The method of producing a rolling element according to claim 25---.

### ***Double Patenting***

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1 to 12, 20 to 23 and 25 to 27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 to 15, 17 to 20 and 22 of copending Application No. 10/790931. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both recite a rolling element having a composition with essentially the same constituents in wt% that are overlapping, and has a martensitic microstructure containing soluble carbon, cementite, and Cr in the cementite, and/or compounds (nitrides, carbides and carbonitrides) in ranges that are encompassing or overlapping. Moreover they both recite the method of producing a rolling element or gear having substantially the same steps at temperature and cooling and/or heating ranges that are overlapping. Note that the overlap in range limitations establishes a prima facie case of obviousness since it would be well within the skill of the artisan to select the pending claimed ranges over the claims of application '931 since application '931 has the same utility and properties.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

24. The unapplied art has been cited to further depict the state of the art in rolling element material.

***Information Disclosure Statement***

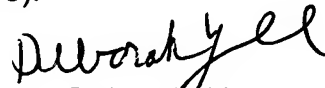
25. The information disclosure statement filed 3-1-04 and 10-29-04 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.
26. Japanese 2003-328078 and Heat Treatment publication require an explanation of relevance.
27. Komine et al publication requires a published dated.
28. The unapplied references have been cited to further depict the state of the art in martensitic bearing iron alloys.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah Yee whose telephone number is 571-272-1253. The examiner can normally be reached on Monday-Friday from 6:00 to 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Deborah Yee  
Primary Examiner  
Art Unit 1742

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